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The main role in these investigations is played by the "structural function," i.e., the dependence of the mean square difference of pulsations of the field characteristics upon the distance between the points of measurement. He pointed out the apparent relation between the structural function and the energy distribution (spectrum), and discussed the theoretical investigations into the structural functions of velocity and temperature fields in a turbulent current, which were carried out by Academician A. N. Kolmogorov, A. M. Yaglom, and Obukhov. He also noted the difficulty of studying experimentally the structure of turbulent flow under laboratory conditions (in aerodynamic tunnels).

To study experimentally the microstructure of winds and the temperature field, the Geophysical Institute of the Academy of Sciences USSR has developed special devices (differential thermoanemometer and microthermometer) which possess very small inertia of the order of 0.01 sec and high sensitivity. As a result, theory has been found in rather close agreement with the experimental data thus obtained. Studies of the structural functions of the wind field have been conducted 1, 3, 5, 15 meters above ground, taking into account the inertia of the transmitter.

In conclusion, Obukhov related the significance of these results to atmospheric acoustics and to studies of the phenomena of fog coagulation and stressed the great importance to meteorology of new methods being worked out in the Geophysical Institute for measuring the vertical velocity component of wind and temperature pulsations, which are applicable to the direct determination of turbulent heat flow in the atmosphere.

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